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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/445,132	03/13/2000	AHMET MURSIT ESKICIOGLU	RCA88637	9525

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EXAMINER
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KIM, JUNG W

ART UNIT	PAPER NUMBER
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2132

DATE MAILED: 03/03/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

09/445,132

Applicant(s)

ESKICIOGLU ET AL.

Examiner

Jung W Kim

Art Unit

2132

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 13 March 2000 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 5.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_.

### **DETAILED ACTION**

1. Claims 1-20 have been examined.

#### ***Specification***

2. The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed. The following title is suggested: 'Method for providing conditional access between a service provider and a set-top box using digital certificate authentication means'.

#### ***Claim Rejections - 35 USC § 112***

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:  

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.
4. Claim 9 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.
5. Claim 9 recites the limitation "said second identification data" in page 14. There is insufficient antecedent basis for this limitation in the claim.

#### ***Claim Rejections - 35 USC § 103***

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

8. Claims 1-7 and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Schneier Applied Cryptography 2<sup>nd</sup> Edition (hereinafter Schneier). As per claim 10, Schneier teaches a basic authentication protocol using public-key cryptography to manage communication between two nodes A and B (see Schneier, page 51, 'Key and Message Transmission'). Node B sends two encrypted messages to node A: the first encrypted message comprises the principle message to be exchanged, which is encrypted with a key k, and the second encrypted message comprises the key k encrypted using the public key of A. These two encrypted messages are sent to A, wherein A decrypts the second encrypted message with A's private key to retrieve key k, and then uses key k to decrypt the first encrypted message to retrieve the principle message. Completion of these steps establishes a secure communication channel

between the two nodes. In this basic protocol, the step of encrypting key  $k$  using A's public key by B wherein the encrypted key  $k$  is decrypted by A using A's private key is effectively equivalent to the step of encrypting key  $k$  using B's private key by B wherein the encrypted key  $k$  is decrypted by A using B's public key (see Schneier, pages 4-5, 'Public-key Algorithms').

9. Although this simple authentication scheme does not disclose the use of a digital certificate to secure a key  $k$ , Schneier teaches in a different section steps whereby a node B submits their digital certificate along with an encrypted principle message to a node A, wherein the digital certificate secures a public key that is used to decrypt the encrypted principle message, which was encrypted using the corresponding private key (see Schneier, pages 576-577, 'Authentication Protocols', steps 1-8). Furthermore, Schneier teaches that digital certificates are part of an entrenched framework (X.509 protocol) to cryptographically secure subject identification and public keys for distribution (see Schneier, pages 575, 'Certificates'). It would be obvious to one of ordinary skill in the art at the time the invention was made for the decrypting key (public key of node B) of the encrypted principle message to be secured by a certificate. Motivation for such an implementation would enable node A to ensure that B's public key and B's subject identification information are valid since the information is verified by a trusted third party as taught by Schneier. This protocol is essential to avoid scenarios wherein an unscrupulous third party poses as node B using bogus public keys.

10. This modified authentication scheme does not further disclose the step of node A submitting the original principle message to node B, whereby through the steps listed above, A compares the decrypted principle message received from B and the original principle message to authenticate B. However, these steps correspond to simple challenge requests and responses initiated by A, returned by B, and verified by A. Schneier teaches challenge protocols as a means to verify that the responder to a message is also the receiver of the message and to ensure messages received from a responder is timely and not a replay of a previous dialogue (see Schneier, page 54, first 4 steps; pages 57-58, 'Yahalom' and Table 3.1, 'Ra, Rb'; page 38, 'Signing Documents and Timestamps'; page 51, 2<sup>nd</sup> paragraph). These protocols use identifier information as well as a nonce and/or timestamp to achieve these means. It would be obvious to one of ordinary skill in the art at the time the invention was made to use the principle message as a challenge value to authenticate the identity of node B and the timeliness of the message received from node B. Motivation for such an implementation would enable node A to authenticate node B using standard challenge means as taught by Schneier. Finally, this modified authentication scheme further discloses a final authentication step of A sending to B a third encrypted message comprising the data of B's identification garnered from B's digital certificate and encrypted using A's private key wherein B decrypts the third encrypted message using A's public key (see Schneier, page 577, steps 9-15). As noted above, this final step is effectively equivalent to the third encrypted message being encrypted by A using B's public key garnered from B's

digital signature wherein B decrypts the third encrypted message using B's private key.  
The aforementioned covers claim 10.

11. As per claim 1, it is a method claim corresponding to claim 10 and it does not teach or define above the information claimed in claim 10. Therefore, claim 1 is rejected as being unpatentable over Schneier for the same reasons set forth in the rejection of claim 1.

12. As per claim 2, Schneier covers a method for managing access to a device as outlined above in the claim 1 rejection under 35 U.S.C. 103(a). In addition, as mentioned above, the first message (the original principle message sent from node A to node B) comprises data associated with node A and a timestamp.

13. As per claims 3-6, they are method claims corresponding to claims 2 and 10 and they do not teach or define above the information claimed in claims 2 and 10. Therefore, claims 3-6 are rejected as being unpatentable over Schneier for the same reasons set forth in the rejections of claims 2 and 10.

14. As per claim 7, Schneier covers a method for managing access to a device as outlined above in the claim 6 rejection. In addition, the digital certificate and corresponding public key associated with the subject (node B) is issued by an independent certificate authority (see Schneier, pages 574-575, X.509 framework).

15. Claims 8, 9, and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Schneier, and further in view of Arnold U.S. Patent No. 5,787,172 (hereinafter Arnold). As per claim 11, Schneier covers a method for managing access between two nodes as outlined above in the claim 1-7 and 10 rejections under 35 U.S.C. 103(a). Although Schneier is silent on the matter of the managing access method being integrated between a service provider, a set-top box, and a smart card, authentication methods utilizing certificates to authenticate between these devices are well known in the art. As an example, Arnold discloses a method for authenticating a cryptographic link between a service provider and a set-top box using a smart card coupled thereto by means of certificate authentication (see Arnold, Figures 1 and 7A-7C and related text). It would be obvious to one of ordinary skill in the art at the time the invention was made to integrate the method covered by Schneier in a connected system between a service provider and a set-top box authenticated with a smart card as disclosed by Arnold. Motivation for such an implementation would enable services provided by the service provider to be restricted based on user rights and privileges stored on the smart card and actuated by a set-top box.

16. As per claim 8, it is a method claim corresponding to claims 1, 10, and 11 and it does not teach or define above the information claimed in claims 1, 10, and 11. Therefore, claim 8 is rejected as being unpatentable over Schneier in view of Arnold for the same reasons set forth in the rejections of claims 1, 10, and 11.



17. As per claim 9, Schneier covers a method for managing access to a device as outlined above in the claim 8 rejection under 35 U.S.C. 103(a). In addition, Schneier teaches that digital certificates comprise data associated with the certificate authority issuing the certificate and data associated with the validity of the digital certificate (see Schneier, page 574, Figure 24.2, 'Issuer' and 'Signature').

18. Claims 12-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Schneier in view of Arnold, and further in view of Force et al. U.S. Patent No. 5,533,123 (hereinafter Force). As per claim 12, Schneier covers a method for managing access as outlined above in the claim 11 rejection under 35 U.S.C. 103(a). Schneier does not expressly disclose that the smart card comprises a plurality of digital certificates, each certificate containing service provider identification. However, smart cards are conventionally designed to incorporate multiple types of information, including a plurality of certificates, each certificate identifying a distinct service. As an example, Force discloses a smart card having this quality (see Force, col. 3, lines 22-31). It would be obvious to one of ordinary skill in the art at the time the invention was made for the smart card to carry a plurality of certificates, wherein each certificate contains service provider information. Motivation for such an implementation would enable access to a plurality of services using only one smart card.

19. As per claims 13-20, they are method claims corresponding to claims 1-12 and they do not teach or define above the information claimed in claims 1-12. Therefore, claims 13-20 are rejected as being unpatentable over Schneier in view of Arnold and/or Force for the same reasons set forth in the rejections of claims 1-12.

### ***Conclusion***

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Rohatgi et al. U.S. Patent No. 5,625,693.

Ohashi et al. U.S. Patent No. 5,761,309.

Kaliski, Jr. U.S. Patent No. 6,085,320.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jung W Kim whose telephone number is (703) 305-8289. The examiner can normally be reached on M-F 9:00 A.M. to 5:00 P.M..

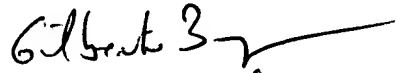
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Gilberto Barron can be reached on (703) 305-1830. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Jung W Kim  
Examiner  
Art Unit 2132

Jk  
March 1, 2004



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